

WHAT IS CLAIMED IS:

1. A pointing device, comprising:

5 a surface having a puck field of motion defined thereon;

a moveable puck comprising a user sensor that detects an interaction between a user and said puck, said puck being confined to move within said puck field of motion; and

10 a position detector that measures the position of said puck in said puck field of motion.

2. The pointing device of Claim 1 further comprising a restoring mechanism that returns said puck to a predetermined area in said puck field of motion.

15 3. The pointing device of Claim 2 wherein said restoring mechanism comprises a spring connected to said puck.

20 4. The pointing device of Claim 2 wherein said restoring mechanism comprises a first magnet on said puck and a second magnet in said puck field of motion.

5. The pointing device of Claim 3 wherein said spring comprises an arcuate spring.

25 6. The pointing device of Claim 5 wherein said arcuate spring comprises a planar spiral spring.

7. The pointing device of Claim 2 wherein said restoring mechanism also applies a force that dampens oscillations in said puck position when said puck returns to said predetermined area in said puck field of motion.

30 8. The pointing device of Claim 1 wherein said user sensor detects a change in capacitance associated with an electrode on said puck.

9. The pointing device of Claim 1 wherein said user sensor comprises a force sensor that generates a first signal indicative of a first predetermined force applied to said puck by said user.

5 10. The pointing device of Claim 9 wherein said force sensor further generates a second signal indicating that a force that is greater than a second predetermined force level is being applied to said puck by said user.

10 11. The pointing device of Claim 1 wherein said user sensor generates a signal indicative of the magnitude of a force applied to said puck by said user.

15 12. The pointing device of Claim 1 further comprising a controller for causing a cursor to move on a display in response to said puck moving in said puck field of motion when said sensor senses said interaction between said user and said puck, the magnitude and direction of motion of said cursor being determined by the magnitude and direction of motion of said puck in said puck field of motion.

20 13. The pointing device of Claim 12 wherein said controller does not cause said cursor to move in response to said puck moving when said sensor does not sense said interaction between said user and said puck.

14. The pointing device of Claim 1 wherein said position sensor comprises surface electrodes on said surface and a puck electrode that moves with said puck.

25 15. The pointing device of Claim 14 wherein said position sensor measures the capacitance between selected ones of said electrodes.

16. The pointing device of Claim 14 wherein said position sensor measures current flowing between selected ones of said electrodes.

30 17. A pointing device comprising:

a surface having a puck field of motion defined thereon;

a moveable puck confined to move within said puck field of motion;

5 a position detector that measures the position of said puck in said puck field of motion; and

a restoring mechanism that returns said puck to a predetermined area in said puck field of motion.

10 18. The pointing device of Claim 2 wherein said restoring mechanism comprises a spring connected to said puck.

15 19. The pointing device of Claim 17 wherein said restoring mechanism comprises a first magnet on said puck and a second magnet that is fixed with respect to said puck field of motion.

20. The pointing device of Claim 18 wherein said spring comprises an arcuate spring.

21. The pointing device of Claim 20 wherein said arcuate spring comprises a planar spiral spring.

22. The pointing device of Claim 17 wherein said restoring mechanism also applies a force that dampens oscillations in said puck position when said puck returns to said predetermined area in said puck field of motion.